



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/768,733	01/24/2001	Per Zeuthen	P/772-283	1229

24998 7590 04/18/2003

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP  
2101 L STREET NW  
WASHINGTON, DC 20037-1526

EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT PAPER NUMBER

1764

DATE MAILED: 04/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/768,733

Applicant(s)

ZEUTHEN ET AL.

Examiner

Walter D. Griffin

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5. 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

The rejections under 35 U.S.C. 102 and 103 as described in paper no. 4 have been withdrawn in view of the amendment filed on March 3, 2003 and remarks contained therein. Arguments concerning these rejections are moot and will not be addressed. The obviousness-type double patenting rejection described in paper no. 4 has been withdrawn in view of the abandonment of Application No. 09/768954.

New rejections follow.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, and 5-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Kelley et al. (US 4,040,944).

The Kelley reference discloses a hydrocarbon conversion process in which a feed is first subjected to catalytic hydrofining (i.e., hydrotreating) to reduce the sulfur and nitrogen contents to a desired level. The hydrotreated effluent that contains hydrogen sulfide and hydrogen may then be cooled and is then hydrotreated over a hydrotreating catalyst at conditions that are effective for the partial hydrogenation of polyaromatics. Partial hydrogenation of polyaromatics

Art Unit: 1764

would necessarily produce some mono-aromatic hydrocarbons. The resulting effluent is then introduced into an FCC unit to produce gasoline. The feed, as shown in the examples, boils within the claimed range. In the examples, the feed has a 50% boiling point of 818°F (437°C). The temperatures in the first and second hydrotreating zones range from 650° to 875°F (343° to 468°C) and the LHSV ranges from 0.2 to 10 in the first zone and ranges from 0.5 to 15 in the second zone. Examples 2 and 3 disclose LHSV values for the second hydrotreating zone that are more than 2 times the values for the first zone. The catalyst used in the second hydrotreating zone comprises a Group VIII metal such as nickel and a Group VI metal such as molybdenum or tungsten on a refractory inorganic oxide. The examples utilize a catalyst that contains nickel and molybdenum. The catalyst may contain alumina or silica-alumina, which may contain hydrogenating metals. See col. 2, lines 24-68; col. 3, lines 1-15 and 51-68; col. 4, lines 1-64; col. 5, lines 57-68; col. 6, lines 1-68; col. 7, lines 1-20 and 56-68; col. 8, lines 8-23; and the examples.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

Art Unit: 1764

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al. (US 4,040,944).

The Kelley reference discloses a hydrocarbon conversion process in which a feed is first subjected to catalytic hydrofining (i.e., hydrotreating) to reduce the sulfur and nitrogen contents to a desired level. The hydrotreated effluent that contains hydrogen sulfide and hydrogen may then be cooled and is then hydrotreated over a hydrotreating catalyst at conditions that are effective for the partial hydrogenation of polyaromatics. Partial hydrogenation of polyaromatics would necessarily produce some mono-aromatic hydrocarbons. The resulting effluent is then introduced into an FCC unit to produce gasoline. The feed, as shown in the examples, boils within the claimed range. In the examples, the feed has a 50% boiling point of 818°F (437°C). The temperatures in the first and second hydrotreating zones range from 650° to 875°F (343° to 468°C) and the LHSV ranges from 0.2 to 10 in the first zone and ranges from 0.5 to 15 in the second zone. Examples 2 and 3 disclose LHSV values for the second hydrotreating zone that are more than 2 times the values for the first zone. The catalyst used in the second hydrotreating zone comprises a Group VIII metal such as nickel and a Group VI metal such as molybdenum or

Art Unit: 1764

tungsten on a refractory inorganic oxide. The examples utilize a catalyst that contains nickel and molybdenum. The catalyst may contain alumina or silica-alumina, which may contain hydrogenating metals. See col. 2, lines 24-68; col. 3, lines 1-15 and 51-68; col. 4, lines 1-64; col. 5, lines 57-68; col. 6, lines 1-68; col. 7, lines 1-20 and 56-68; col. 8, lines 8-23; and the examples.

The Kelley reference does not disclose that the temperature in step (c) is between 50° and 150°C lower than the outlet temperature of step (a).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Kelley by utilizing a temperature in step (c) that is between 50° and 150°C lower than the outlet temperature of step (a) because the disclosed temperature ranges for each zone permit temperature differences within the claimed range and because Kelley discloses that the second hydrotreater can be operated at substantially reduced temperatures as compared to the first hydrotreater. Therefore, one having ordinary skill in the art would expect the utilizing temperature differences within the claimed range in the process of Kelley would result in effective hydroconversion.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kelley et al. (US 4,040,944) as applied to claim 1 above, and further in view of Inwood (US 3,691,060).

As discussed above, the Kelley reference does not disclose a process wherein the second step is performed in a final catalyst bed of the hydrotreating zone.

Inwood discloses that hydrogenation processes that employ two catalysts can equivalently use two separate reactors or a single reactor in which the two catalysts are disposed. See col. 2, lines 17-30.

Art Unit: 1764

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Kelley by utilizing one reactor in which both catalysts are disposed thereby resulting in a final catalyst bed containing the second zone catalyst as suggested by Inwood because it is more economical to employ a single reactor.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

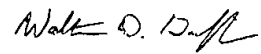
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the

Art Unit: 1764

organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.



Walter D. Griffin  
Primary Examiner  
Art Unit 1764

WG  
April 15, 2003